



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,307	10/24/2003	Shalaby W. Shalaby	PC25466A	1484

23913 7590 02/12/2007
PFIZER INC
150 EAST 42ND STREET
5TH FLOOR - STOP 49
NEW YORK, NY 10017-5612

EXAMINER

MAEWALL, SNIGDHA

ART UNIT	PAPER NUMBER
----------	--------------

1615

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/12/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/693,307	SHALABY ET AL	
	Examiner	Art Unit	
	Snigdha Maewall	1615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/2/05</u> | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

1. Receipt of IDS filed on 06/06/2005 is acknowledged.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-3, 6, 9, 12-13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

This is a written description rejection.

Instant claims are generic with respect to "bioactive agent" and have not been sufficiently described to show possession of compositions comprising the entire genus. The invention defined by the claims requires a specific type physiochemical interaction between the bioactive agent and a polymer in order to produce the desired result. With regard to the bioactive agent, the aryl-heterocyclic compounds described in US 4,831,031 (incorporated by reference into instant disclosure on page 3 of the specification) are sufficiently similar in

Art Unit: 1615

structure or function that the showing of ziprasidone is sufficient to show possession of this sub- genus. However, this showing is not sufficient to show possession of all bioactive agents, or all aryl-heterocyclic compounds. The genus of bioactive agent, and the sub-genus of aryl-heterocyclic compound, includes materials having disparate functions and properties. These materials may be hydrophilic or hydrophobic; they may be anionic, cationic, zwitterionic, or neutral; they may have one or more of a multitude of biological functions. Clearly, the showing in the specification, which is limited to ziprasidone, is not sufficient to show possession of all such materials in the context of the invention.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The word "liquid polymer" in claims 1 and 13 is confusing. It can be interpreted as "polymer in solution" which is ionically bonded or a "polymer which is liquid".

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-8 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Shalaby to (U.S. Patent No. 5,714,519).

Shalaby discloses a hydrogel-forming, self-solvating, absorbable polyester copolymers capable of selective, segmental association into a compliant hydrogel mass on contact with an aqueous environment (abstract). According to Shalaby, the copolymer comprises a base component, designated as "Component A". The "Component A" refers to the basic structure of the copolymers of the invention. "Component A" comprises a molecular chain having a hydrophilic block "Y" and a relatively hydrophobic polyester block "X". The hydrophobic block/segmented polymer comprises a polyester formed by grafting a glycolide, lactide, .epsilon.-caprolactone, p-dioxanone, trimethylene carbonate or combinations thereof, onto the hydroxylic or amino groups of a hydrophilic polymer precursor. The hydrophilic block comprises a polyoxyethylene,

Art Unit: 1615

poly(oxyethylene-b-oxypropylene), polypeptide polyalkylene oxamate, a polysaccharide, and derivatives thereof; or a liquid, high molecular weight polyether glycol interlinked with an oxalate or succinate functionalities in linear or branched form (column 6 and 7, lines 65-67 and 1-15).

"Component A" optionally comprises carboxylic end groups which facilitates ionically binding a bioactive agent or drug (column 7, lines 19-23). The composition comprises an absorbable carrier which helps in immediate and controlled release of the bioactive drug.(column 7, lines, 30-33).

According to Shalaby a copolymer optionally comprises a bioactive agent, such a copolymer is capable of the controlled-release of a biologically active agent for modulating cellular events such as wound healing and tissue regeneration (column 6, lines 30-45). The copolymer described by Shalaby is capable of being injected into living tissues (column 6, line 57) (hence proving that the copolymer is liquid conjugate).

The hydrophobic block "X" as described above refers to absorbable polyester chain block(s) or segment(s) of variable length, which is a viscous liquid at room temperature. These hydrophobic block (s) "X "comprises, copolymeric segments of glycolide, L-lactide, trimethylene carbonate (column 8, lines 4-9).

The "Hydrophilic Block(s)" or segment (s) "Y", comprises poly(oxyethylene) (column 8, lines 17-18).

Shalaby further discloses that the length of the hydrophilic block "Y" and its weight fractions can be varied to modulate the rate of gel formation, its modulus,

Art Unit: 1615

its water content, and diffusivity of bioactive drug (column 8, lines 23-37).

Shalaby discloses that to render "Component A" more receptive to basic drugs, its end-groups can optionally be carboxylated (column 10, lines 1-5).

"Component A" can be succinylated to provide acidic end-groups for ionic binding on the bioactive agent/drug (column 12, lines 8-10).

Shalaby further discloses that liquid compositions made of component A with or without drug or bioactive agent can form hydrogels upon contacting a liquid environment (column 12, lines 10-12). The "Component A" as disclosed in the reference, comprises an inherent viscosity at 25 degrees C in chloroform ranging between 0.03 to 0.80 dL/g and can be present as a liquid at room temperature and can be administered through a syringe needle (column 10, lines 10-17). The liquid conjugate, "Component A" in this case can combine with bioactive drugs such as calcium (column 12, lines 58-59) hence proving the ionic bond linkage between the liquid conjugate and the bioactive drug.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1615

9. Claims 1-3, 6, 4-10, 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shalaby to (U.S. Patent No. 5,714,519) in view of Kim et al. to (U.S. Patent No. 6,232,304 B1).

Teachings of Shalaby have been discussed above.

Shalaby to (U.S. Patent No. 5,714,519) does not specifically teach the bioactive agent such as Ziprasidone (aryl- heterocyclic compound).

Kim et al. teaches aryl- heterocyclic drug such as Ziprasidone. Kim et al. discloses that increasing drug solubility and stability through appropriate formulation can lead to therapeutic efficacy of the drug (column 1, lines 17-20). On (column 3, lines 10-27), Kim et al. discloses that ziprasidone has utility as a neuroleptic drug, and is thus useful as neuroleptic/antipsychotic drug (column 3, lines 26-30). Since the object of both Shalaby and Kim et al. is to increase the drug solubility, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize Ziprasidone in the liquid conjugate as a bioactive drug or alternately to use polymers and carboxyl-bearing polymers or carboxyl-bearing block/segment as forwarded by Shalaby, with Ziprasidone to make liquid conjugate because Ziprasidone acts as an antipsychotic as disclosed by Kim et al. Additionally, since Ziprasidone happens to be basic in nature, it would be expected for ziprasidone to form ionic bond with carboxyl-bearing polymers or block/ segment copolymers which are acidic in nature. A skilled artisan would thus have been motivated to formulate a liquid conjugate

Art Unit: 1615

comprising Ziprasidone and absorbable polymer with one or more carboxyl group with a reasonable expectation of success.

Robins et al. the reference of (7119246) which discloses a method for the treatment of acne that comprises applying a fluid comprising a polyalkylene carbonate (abstract) is cited as interest.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Snigdha Maewall whose telephone number is (571)-272-6197. The examiner can normally be reached on Monday -Friday from 8:30 A.M to 5:00 P.M.

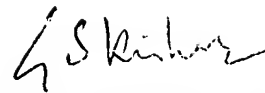
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Woodward, can be reached on (571) 272-8373. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Art Unit: 1615

Snigdha Maewall

Art Unit 1615



Gollamudi S. Kishore, PhD
Primary Examiner
Group 1600